



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,594	01/26/2004	Kenichi Aota	04970/0200827-US0	1744

7278 7590 04/06/2005

DARBY & DARBY P.C.
P. O. BOX 5257
NEW YORK, NY 10150-5257

EXAMINER

GARCIA, ERNESTO

ART UNIT	PAPER NUMBER
----------	--------------

3679

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,594

Applicant(s)

AOTA ET AL.

Examiner

Ernesto Garcia

Art Unit

3679

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/26/04; 2/11/04; 5/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the supported portion 56 extending from the rectangular tongue 51 (line 14 of claim 1), and "the locking body has a recessed portion (lines 19-20 of claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Note, the drawings show the supported portion 56 extending from a U-shaped curved portion 55 (see Fig. 1).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled

Art Unit: 3679

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because the limitation "of a shaft body and a shaft joint" in line 1 should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the limitation "at least one of the shaft joint body and the locking body" in line 19 makes unclear whether the statement encompasses an alternative for two conditions being "the shaft joint body" or "the locking body", or an alternative for three conditions being "the shaft joint body", "the locking body", or both.

Regarding claims 3 and 5, the limitation "at least one of the shaft joint body and the locking body" in lines 3-4 makes unclear the statement encompasses an alternative for two conditions being "the shaft joint body" or "the locking body", or an alternative for three conditions being "the shaft joint body", "the locking body", or both.

Regarding claim 5, the metes and bounds of the claim is unclear and contradictory. Claim 5 states that the projection is formed of a material with hardness not higher than that of the shaft joint body or the locking body in lines 2-5 and, in the next clause, it states that the hardness of the projection is made higher than that of the shaft joint body and the locking body. This contradicts the first clause. Since hardness is directly associated with material choice, it would be unclear what material does both situations at the same time. Therefore, applicant needs to clarify whether the hardness of the projection is not higher or higher than that of the shaft joint body or the locking body.

Regarding claims 2, 4, and 6-8, these claims directly or indirectly depend from claim 1 and therefore are indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Haldric et al., 4,900,178.

Regarding claim 1, Haldric et al. disclose, in Figure 3A, a coupling structure comprising a shaft body **12**, a shaft joint **A2**, an a coupling shaft **31**. The shaft joint **A2** includes an engagement groove **A3**, a shaft joint body **23**, a locking body **32**, a regulating tongue **440**, a supported portion **44**, and a plate body **42**. The shaft body **12** engages with the engagement groove **A3**. The shaft joint body **23** has two bores **222,223** facing the engagement groove **A3**. The locking body **32** is press-fitted into one of the bores **222,223**. The supported portion **44** extends from the regulating tongue **440** and supported between the locking body **32** and the shaft joint body **23**. The plate body **42** has a projection **411** projecting from the supported portion **44**. The shaft joint body **23** or the locking body **32** has a recessed portion **221** into which the projection **411** is fitted.

Art Unit: 3679

Regarding claim 8, applicant is reminded that the method of forming the projection is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given limited patentable weight. See MPEP ' 2113.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldric et al. 4,900,178, in view of Aota et al., 6,474,898.

Regarding claim 2, Haldric et al., as discussed above, fails to disclose the projection **411** having hardness higher than hardness of the shaft joint body **23** or the locking body **32**. Aota et al. teach in Figure 3 a projection **11** having a hardness higher than hardness of a shaft joint body **1** or a locking body **21**. However, Aota does not explicitly explain a reason for making the projection having the hardness higher than the hardness of the shaft joint body or the locking body. Since the projection is made of spring steel (col. 2, lines 52-54), it appears that the projection has to withstand higher impact load or load than the joint body or the locking body not made of steel. Therefore, as taught by Aota et al., it would have been obvious to one of ordinary skill in the art at

Art Unit: 3679

the time the invention was made to make the projection have a hardness higher than hardness of the shaft joint body or the locking body to sustain impact loads.

Regarding claim 7, applicant is reminded that the method of forming the projection is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given limited patentable weight. See MPEP ' 2113.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haldric et al. 4,900,178, in view of Aota et al., 6,474,898, as applied to claims 2 and 7 above, and further in view of Sekine et al., 6,155,739.

Regarding claim 3, as best understood, Haldric et al., as modified above, discloses the projection **411** is made of spring steel (see Aota et al.; col. 2, lines 52-54). However, it is unknown whether the spring steel has a hardness higher than the hardness of the shaft joint body **23** or the locking body **32**. Sekine et al. teaches, in column 17 in lines 9-14, that the spring steel has a hardness higher than the hardness (HRC40) of a shaft joint body or a locking body. Note, conventional shaft joint bodies usually use the HR B scale as the shaft joint bodies are made of carbon steel or aluminum alloys. Therefore, as taught by Sekine et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the spring steel have a hardness higher of the shaft joint body or the locking body for safety reasons.

Regarding claims 4 and 6, applicant is reminded that the method of forming the projection is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given limited patentable weight. See MPEP ' 2113.

Regarding claim 5, as best understood, Haldric et al., as modified above, makes unknown whether the projection **411** is formed of a material with hardness higher than the hardness of the shaft joint body **23** or the locking body **32**. Sekine et al. teaches, in column 17 in lines 9-14, a projection formed of a material with a hardness higher (HRC40) than the hardness of a shaft joint body or a locking body. Note, conventional shaft joint bodies usually use the HR B scale as the shaft joint bodies are made of carbon steel or aluminum alloys. Therefore, as taught by Sekine et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the spring steel have a hardness higher of the shaft joint body or the locking body for safety reasons.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Japanese patent, JP11-30241 shows a similar shaft joint body having a recessed portion into which the projection is fitted.

Art Unit: 3679

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 703-308-8606. The examiner can normally be reached from 9:30-6:00. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on 703-308-2686. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

E.G.

Daniel P Stodola

E.G.

April 1, 2005

Attachment: one marked-up page of Haldric et al., 4,900,178

DANIEL P. STODOLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

